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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/075,181	02/13/2002	Shane Clifford	303.759US1	7264
21186	7590	02/10/2005	EXAMINER	
SCHWEGMAN, LUNDBERG, WOESSNER & KLUTH, P.A. P.O. BOX 2938 MINNEAPOLIS, MN 55402			YIGDALL, MICHAEL J	
			ART UNIT	PAPER NUMBER
			2122	

DATE MAILED: 02/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/075,181

Applicant(s)

CLIFFORD, SHANE

Examiner

Michael J. Yigdoll

Art Unit

2122

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 13 February 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-45 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-45 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 February 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>3/25/02</u> . | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

1. Claims 1-45 are pending and have been examined. The priority date considered for the application is February 13, 2002.

#### ***Drawings***

2. The drawings are objected to because the title provided on each drawing sheet is not the title of the invention, as is required by 37 CFR 1.84(c).

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

#### ***Claim Rejections - 35 USC § 101***

3. 35 U.S.C. 101 reads as follows:

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Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4. Claims 1-16 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

The claims are directed to abstract ideas that are not tangibly embodied in a manner so as to be executable by a computer. The steps of the recited methods may be performed merely as a mental exercise that would not produce a concrete and tangible result. Such abstract ideas do not constitute a statutory process, machine, manufacture or composition of matter.

***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 3, 4, 7, 8, 12-16, 20-24, 26, 27, 29, 30, 32, 33, 38, 39, 41 and 42 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claims each recite that an element of the invention “is useful for” some purpose. Such language merely suggests the intended use or a possible use of the element, but does not limit the scope of the claims. The metes and bounds of the recitation “is useful for” are not clear.

***Claim Rejections - 35 USC § 102***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. Claims 9-45 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Pat. No. 6,851,107 to Coad et al. (“Coad”).

With respect to claim 9, Coad discloses a method, comprising:

(a) creating a feature diagram and a corresponding potential statechart (see, for example, column 4, lines 38-45, which shows developing software by creating corresponding graphical representations of the source code, and column 17, lines 16-22 and 37-42, which shows that the graphical representations include statecharts and component diagrams, i.e. feature diagrams);

(b) modifying the feature diagram (see, for example, column 4, line 61 to column 5, line 3, which shows changing a graphical representation of the code); and

(c) making modifications to the potential statechart that correspond to the modifications of the feature diagram to produce a deterministic statechart (see, for example, column 4, line 61 to column 5, line 3, which shows updating the graphical representations when changes are made to the code, and column 17, lines 25-32, which shows an activity diagram, i.e. a deterministic statechart).

With respect to claim 10, the rejection of claim 9 is incorporated, and Coad also discloses the limitation wherein the potential statechart conforms to the Unified Modeling Language (see, for example, column 15, lines 50-54).

With respect to claim 11, the rejection of claim 9 is incorporated, and Coad also discloses the limitation wherein the deterministic statechart conforms to the Unified Modeling Language (see, for example, column 15, lines 50-54).

With respect to claim 12, the rejection of claim 9 is incorporated, and Coad also discloses the limitation wherein the feature diagram is useful for modeling a real-time control system (see, for example, column 1, lines 47-52).

With respect to claim 13, the rejection of claim 9 is incorporated, and Coad also discloses the limitation wherein the feature diagram is useful for modeling a system for controlling semiconductor equipment (see, for example, column 1, lines 47-52).

With respect to claim 14, the rejection of claim 9 is incorporated, and Coad also discloses the limitation wherein the deterministic statechart is useful for generating computer-executable code (see, for example, column 15, lines 30-40).

With respect to claim 15, the rejection of claim 9 is incorporated, and Coad also discloses the limitation wherein the deterministic statechart is useful for generating computer-executable code for a real-time control system (see, for example, column 4, lines 30-40, and column 1, lines 47-52).

With respect to claim 16, the rejection of claim 9 is incorporated, and Coad also discloses the limitation wherein the deterministic statechart is useful for generating computer-executable code for a system for controlling semiconductor equipment (see, for example, column 4, lines 30-40, and column 1, lines 47-52).

With respect to claim 17, the limitations recited in the claim correspond to the limitations recited in claim 9 (see the rejection of claim 9 above). Coad also discloses:

(d) generating computer-executable code from the deterministic statechart (see, for example, column 4, lines 30-40).

With respect to claim 18, the limitations recited in the claim correspond to the limitations recited in claim 10 (see the rejection of claim 10 above).

With respect to claim 19, the limitations recited in the claim correspond to the limitations recited in claim 11 (see the rejection of claim 11 above).

With respect to claim 20, the limitations recited in the claim correspond to the limitations recited in claim 12 (see the rejection of claim 12 above).

With respect to claim 21, the limitations recited in the claim correspond to the limitations recited in claim 13 (see the rejection of claim 13 above).

With respect to claim 22, the limitations recited in the claim correspond to the limitations recited in claim 14 (see the rejection of claim 14 above).

With respect to claim 23, the limitations recited in the claim correspond to the limitations recited in claim 15 (see the rejection of claim 15 above).

With respect to claim 24, the limitations recited in the claim correspond to the limitations recited in claim 16 (see the rejection of claim 16 above).

With respect to claim 25, the limitations recited in the claim correspond to the limitations recited in claim 17 (see the rejection of claim 17 above).

With respect to claim 26, the limitations recited in the claim correspond to the limitations recited in claim 15 (see the rejection of claim 15 above).

With respect to claim 27, the limitations recited in the claim correspond to the limitations recited in claim 16 (see the rejection of claim 16 above).

With respect to claim 28, the limitations recited in the claim correspond to the limitations recited in claim 11 (see the rejection of claim 11 above).

With respect to claim 29, the limitations recited in the claim correspond to the limitations recited in claim 12 (see the rejection of claim 12 above).

With respect to claim 30, the limitations recited in the claim correspond to the limitations recited in claim 13 (see the rejection of claim 13 above).

With respect to claim 31, Coad discloses a system useful for generating computer-executable code (see, for example, column 15, lines 30-40), comprising:



(a) a repository having stored feature diagrams and corresponding potential statecharts (see, for example, column 4, lines 38-45, which shows developing software by creating corresponding graphical representations of the source code, and column 17, lines 16-22 and 37-42, which shows that the graphical representations include statecharts and component diagrams, i.e. feature diagrams; also see, for example, column 15, lines 61-64, which shows using existing code, i.e. stored code); and

(b) an editor capable of making modifications to the stored feature diagrams and capable of making modifications to the potential statecharts that correspond to modifications made to the stored feature diagrams (see, for example, column 4, line 61 to column 5, line 3, which shows changing a graphical representation of the code and updating the graphical representations when changes are made to the code).

With respect to claim 32, the limitations recited in the claim correspond to the limitations recited in claim 12 (see the rejection of claim 12 above).

With respect to claim 33, the limitations recited in the claim correspond to the limitations recited in claim 13 (see the rejection of claim 13 above).

With respect to claim 34, the limitations recited in the claim correspond to the limitations recited in claim 12 (see the rejection of claim 12 above).

With respect to claim 35, the limitations recited in the claim correspond to the limitations recited in claim 13 (see the rejection of claim 13 above).

With respect to claim 36, the limitations recited in the claim correspond to the limitations recited in claim 10 (see the rejection of claim 10 above).

With respect to claim 37, the limitations recited in the claim correspond to the limitations recited in claim 31 (see the rejection of claim 31 above). Coad also discloses:

(d) a code generator for generating computer-executable code from deterministic statecharts (see, for example, column 4, lines 30-40).

With respect to claim 38, the limitations recited in the claim correspond to the limitations recited in claim 15 (see the rejection of claim 15 above).

With respect to claim 39, the limitations recited in the claim correspond to the limitations recited in claim 16 (see the rejection of claim 16 above).

With respect to claim 40, the limitations recited in the claim correspond to the limitations recited in claims 10 and 11 (see the rejection of claims 10 and 11 above).

With respect to claim 41, the limitations recited in the claim correspond to the limitations recited in claim 12 (see the rejection of claim 12 above).

With respect to claim 42, the limitations recited in the claim correspond to the limitations recited in claim 13 (see the rejection of claim 13 above).

With respect to claim 43, the limitations recited in the claim correspond to the limitations recited in claim 9 (see the rejection of claim 9 above).

With respect to claim 44, the limitations recited in the claim correspond to the limitations recited in claim 9 (see the rejection of claim 9 above).

With respect to claim 45, the limitations recited in the claim correspond to the limitations recited in claim 9 (see the rejection of claim 9 above).

***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Coad in view of U.S. Pat. No. 6,179,490 to Pruitt ("Pruitt").

With respect to claim 1, Coad discloses a method for utilizing a feature diagram in the creation of a potential statechart (see, for example, column 4, lines 38-45, which shows developing software by creating corresponding graphical representations of the source code, and column 17, lines 16-22 and 37-42, which shows that the graphical representations include statecharts and component diagrams, i.e. feature diagrams), comprising:

(a) adding a state to the potential statechart for each state-type feature added to the feature diagram (see, for example, column 4, line 61 to column 5, line 3, which shows updating the graphical representations when changes are made to the code, and FIG. 16, which shows states that are added to the statechart).

Although Coad discloses that the statecharts illustrate states and transitions (see, for example, column 17, lines 16-22), including decision states (see, for example, FIG. 17 and column 17, lines 25-32), Coad does not expressly disclose:

(b) for each added state-type feature that is an optional feature, adding a decision state to the potential statechart that has a guarded transition to the added state and adding an else transition;

(c) for each alternate relationship to be added to the feature diagram, adding a decision state to the potential statechart and adding a guarded transition from the added decision state to each of the states in the alternate relationship, wherein an else transition is added to the added decision state if the features in the alternate relationship are optional; and

(d) for each or-relationship to be added to the feature diagram, adding a decision state to the potential statechart for each state in the or-relationship, wherein each added decision state has a guarded transition to one of the states in the or-relationship, and each decision state has an else transition.

However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to add the appropriate states to the statechart of Coad in a manner so as to reflect the desired relationships.

Moreover, Pruitt discloses an analogous method for creating a flowchart to represent and create a program (see, for example, column 1, lines 8-15). Programs created in this manner are “structured” so as to improve the quality of the program (see, for example, column 2, lines 1-5).

Pruitt further discloses elements of the flowcharts, such as “if-then” and “if-then-else” blocks for “optional” and “alternate” relationships (see, for example, FIGS. 2D and 2E), as in

parts (b) and (c) above, and “case” blocks for “or” relationships (see, for example, FIG. 2F), as in part (d) above.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to supplement the method of Coad with such features as taught by Pruitt, so as to create programs that are structured and therefore of improved quality.

With respect to claim 2, the rejection of claim 1 is incorporated, and Coad also discloses the limitation wherein the potential statechart conforms to the Unified Modeling Language (see, for example, column 15, lines 50-54).

With respect to claim 3, the rejection of claim 1 is incorporated, and Coad also discloses the limitation wherein the feature diagram is useful for modeling a real-time control systems (see, for example, column 1, lines 47-52).

With respect to claim 4, the rejection of claim 1 is incorporated, and Coad also discloses the limitation wherein the feature diagram is useful for modeling a system for controlling semiconductor equipment (see, for example, column 1, lines 47-52).

With respect to claim 5, the limitations recited in the claim correspond to the limitations recited in claim 1 (see the rejection of claim 1 above). Coad also discloses:

(e) adding transitions to the potential statechart, wherein the transitions are transitions that are triggered by a signal or stimulus (see, for example, column 17, lines 16-22, which shows transitions caused by stimuli).

With respect to claim 6, the limitations recited in the claim correspond to the limitations recited in claim 2 (see the rejection of claim 2 above).

With respect to claim 7, the limitations recited in the claim correspond to the limitations recited in claim 3 (see the rejection of claim 3 above).

With respect to claim 8, the limitations recited in the claim correspond to the limitations recited in claim 4 (see the rejection of claim 4 above).

### ***Conclusion***

11. The prior art made of record and not relied upon is considered pertinent to Applicant's disclosure.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael J. Yigdall whose telephone number is (571) 272-3707. The examiner can normally be reached on Monday through Friday from 7:30am to 4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tuan Q. Dam can be reached on (571) 272-3695. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.


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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MY

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